

Application No. 09/891,997
Amendment dated November 2, 2005
Reply to Office Action of May 2, 2005

REMARKS

Status Of Application

Claims 1-47 were pending in the application. By this amendment claims 27 and 28 are canceled and new claim 48 is added. Thus, the status of the claims is as follows:

Claims 6-26 and 30-43 are withdrawn from consideration.

Claims 1-5 and 44-47 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,920,409 A to Yamagishi ("Yamagishi") in view of U.S. Patent No. 5,734,367 to Tsuboyama, et al., ("Tsuboyama").

Claim 29 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamagishi in view of Tsuboyama as applied to claims 1-5 and 44-47 in further view of U.S. Patent No. 6,414,669 B1 to Masazumi ("Masazumi").

New Claim

New claim 48 is based upon claim 1, but more fully claims the driving method employed by the controller. Support for this specific driving method is described in paragraph [0060]. Thus, new claim 48 introduces no new matter.

35 U.S.C. § 103(a) Rejection

The rejection of claims 1-5 and 44-47 under 35 U.S.C. § 103(a), as being unpatentable over Yamagishi in view of Tsuboyama, is respectfully traversed based on the following.

Claim 1 includes the limitation of "the liquid crystal having a memory effect, the liquid crystal exhibiting a cholesteric phase." However, Yamagishi is not directed to a liquid crystal having a memory effect or one that exhibits a cholesteric phase as neither

“memory effect” nor “cholesteric phase” are found within Yamagishi. Thus, Yamagishi does not disclose or suggest a liquid crystal having a memory effect or one exhibiting a cholesteric phase and therefore cannot render obvious the invention of claim 1. Similarly, Tsuboyama does not disclose a liquid crystal having both a memory effect and exhibiting a cholesteric phase. The combination of Yamagishi and Tsuboyama thus does not disclose a liquid crystal having the memory effect and exhibiting a cholesteric phase as required by claim 1 and cannot render obvious the invention of claim 1.

Claim 1 also includes the limitation that the pitch of the signal electrodes is greater than the pitch of the scanning electrodes. Between Yamagishi and Tsuboyama, only Yamagishi discloses a different pitch between the signal and scanning electrodes. However, Yamagishi discloses the pitch of the scanning electrodes is greater than that of the signal electrodes, the opposite of that required by claim 1. The Examiner asserts “signal” and “scanning” are merely labels and that their functions can readily be interchanged, resulting in the claimed requirement of the signal electrode pitch being greater than that of the scanning electrode. However, such an assertion completely overlooks the resultant pixel shape. As seen in Fig. 1 of Yamagishi, R1, G2 and B3 would form a full-color pixel having a rectangular shape approximately three units wide and two units high. At a distance, the human eye would detect these three colors of light as appearing to come from a single point. In contrast, by exchanging the functions of the scanning and signal electrodes, the resultant pixel would have a rectangular shape approximately one unit wide by six units high, an extremely elongated pixel. Because the pixel size in this inverted electrode scheme is so long and narrow, the eye would not detect the three colors of light as coming from the same point. This elongated pixel would result in a very banded display that would not be pleasing to the eye. Thus, merely exchanging the functions of the scanning and signal electrodes raises a significant issue that has not been addressed in any office action to date. Because a display employing such an elongated pixel would not be accepted in the market, one of skill in the art would clearly not be motivated to exchange the function of the scanning and signal electrodes in the Yamagishi reference. Because one of skill in the art would not exchange the functions of

the scanning and signal electrodes, Yamagishi does not disclose or suggest a liquid crystal display in which the pitch of the signal electrodes is greater than the pitch of the scanning electrodes, a requirement of claim 1. Therefore, the combination of Yamagishi and Tsuboyama fails to disclose or suggest this limitation of claim 1 and cannot render claim 1 obvious.

In addition, the office action states Yamagishi fails to disclose a liquid crystal display apparatus with the claimed controller. For this reason, the office action combines Yamagishi with Tsuboyama. Yamagishi is directed to a full-color display as is evident in the title, "Matrix Type Color Liquid Crystal Display Device." Furthermore, Figs. 1-8 and 10 each illustrate red, green and blue pixels adjacent to each other. In contrast, Tsuboyama is directed to a black and white display, as is evident in the Description of the Preferred Embodiments. Column 3, lines 37-42 describe the display signals as "including a unit data signal I(B) for displaying a bright state and a unit data signal I(D) for displaying a dark state, which have mutually inverted polarities ... A pixel state is determined by selecting either one of the data signals I(B) and I(D)." Because Yamagishi is directed to a full-color display and Tsuboyama is directed to a black and white display, one of skill in the art would not be motivated to combine such references. Thus, the combination of Yamagishi and Tsuboyama is improper and cannot render obvious the invention of claim 1 for at least this additional reason.

Claims 2-5 and 44-46 depend from nonobvious claim 1 and are nonobvious for at least the same reasons.

Claim 47 is similarly rejected over the combination of Yamagishi and Tsuboyama. As described above with respect to claim 1, this combination does not disclose or suggest a liquid crystal having a memory effect and exhibiting a cholesteric phase, a requirement of claim 47. Also as noted above, Yamagishi's full-color liquid crystal display would not be combined with Tsuboyama's black and white display drivers by one of skill in the art.

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For at least these reasons the combination of Yamagishi and Tsuboyama fails to render obvious the invention of claim 47.

Accordingly, it is respectfully requested that the rejection of claims 1-5 and 44-47 under 35 U.S.C. § 103(a) as being unpatentable over Yamagishi in view of Tsuboyama, be reconsidered and withdrawn.

The rejection of claim 29 under 35 U.S.C. § 103(a), as being unpatentable over Yamagishi in view of Tsuboyama as applied to claims 1-5 and 44-47 in further view of Masazumi, is respectfully traversed based on the following.

Claim 29 depends from claim 1. As noted above, the combination of Yamagishi and Tsuboyama fails to disclose the required electrode pitch configuration such that one of skill in the art would exchange the functions of the scanning and signal electrodes. For at least this reason, the combination of Yamagishi and Tsuboyama does not render obvious the invention of claim 1, from which claim 29 depends. Masazumi discloses in Fig. 4 a scanning and signal electrode arrangement having equal pitch, in contrast to claim 1 that requires that the pitches not be equal. Further, Masazumi fails to provide any suggestion that elongated pixels are acceptable such that one of skill in the art would be motivated to exchange the functions of the scanning and signal electrodes in Yamagishi. Thus, one of skill in the art would not be motivated to combine Yamagishi, Tsuboyama and Masazumi in the manner proposed by the office action. Therefore, the combination of Yamagishi, Tsuboyama and Masazumi fails to disclose or suggest each limitation of claim 1 and cannot render claim 1 obvious.

Furthermore, Masazumi fails to provide any suggestion that one of skill in the art would combine the full-color liquid crystal display of Yamagishi with the black and white display controller of Tsuboyama. Once again, because one of skill in the art would not be motivated to combine Yamagishi, Tsuboyama and Masazumi, this combination cannot render obvious the invention of claim 1.

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Accordingly, it is respectfully requested that the rejection of claims 27-29 under 35 U.S.C. § 103(a) as being unpatentable over Yamagishi in view of Tsuboyama as applied to claims 1-5 and 44-47 in further view of Masazumi.

CONCLUSION

In view of the foregoing, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are respectfully requested.

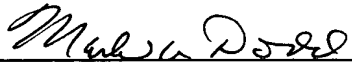
This Response increases the number of independent claims by one from four to five, but does not increase the total number of claims, and does not present any multiple dependency claims. Separately, if an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Accordingly, a Response Transmittal and Fee Authorization form authorizing the amount of \$1220 to be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260 is enclosed herewith in duplicate. However, if the Response Transmittal and Fee Authorization form is missing, insufficient, or otherwise inadequate, or if any fee pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, is required by this

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response, please charge such fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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